What is claimed is:

1. A gamma camera, comprising:

a plurality of bar detector strips made of scintillating material, arranged in a stack configuration;

at least one photodetector coupled to each end of said stack; and

a slat collimator including a plurality of elongated slats, for collimating each of said plurality of bar detector strips to receive gamma photons in only a single dimension.

2. A gamma camera as set forth in claim 1, further comprising a pair of photodetectors respectively coupled to each end of each bar detector strip of said stack.

3. A gamma camera as set forth in claim 2, wherein said pair of photodetectors are silicon strip detectors (SSDs).

4. A gamma camera as set forth in claim 2, wherein said pair of photodetectors are photodiodes.

5. A gamma camera as set forth in claim 1, wherein said bar detector strips are formed of CsI.

6. A gamma camera as set forth in claim 1, wherein said photodetector is a position-sensitive photomultiplier tube (PS-PMT).

7. A gamma camera as set forth in claim 1, wherein each bar detector strip is located between individual slats of said slat collimator.

8. A gamma camera according to claim 7, wherein each of said individual slats has a length matching the length of said bar detector strips.

9. A gamma camera as set forth in claim 1, wherein said slat collimator is mounted adjacent to said stack.

10. A gamma camera according to claim 9, wherein each of said individual slats has a length matching the length of said bar detector strips in said stack, and wherein spacing between slats of said slat collimator matches dimensions of said bar detector strips.

11. A gamma camera, comprising:

a plurality of bar detector strips made of scintillating material;

at least one photodetector coupled to each end of each of said bar detector strips; and

a slat collimator including a plurality of elongated slats, for collimating each of said plurality of bar detector strips to receive gamma photons in only a single dimension.

12. A gamma camera as set forth in claim 11, wherein said photodetectors are silicon strip detectors (SSDs).

13. A gamma camera as set forth in claim 11, wherein said photodetectors are photodiodes.

14. A gamma camera as set forth in claim 11, wherein said bar detector strips are formed of CsI.

15. A gamma camera as set forth in claim 11, wherein each bar detector strip is located between individual slats of said slat collimator.

16. A gamma camera according to claim 15, wherein each of said individual slats has a length matching the length of said bar detector strips.

17. A gamma camera as set forth in claim 11, wherein said slat collimator is mounted adjacent to said plurality of bar detector strips.

18. A gamma camera according to claim 17, wherein each of said individual slats has a length matching the length of said bar detector strips, and wherein spacing between slats of said slat collimator matches dimensions of said bar detector strips.

19. A method of obtaining tomographic images of an object, comprising the steps of:

obtaining a plurality of sets of planar integral scintillation event data from said object at a plurality of azimuth angles of a rotating scintillation bar detector for each of a plurality of gantry angles of a gamma camera, said scintillation bar detector including

a plurality of bar detector strips made of scintillating material;

at least one photodetector coupled to each end of each of said bar detector strips; and

a slat collimator including a plurality of elongated slats, for collimating each of said plurality of bar detector strips to receive gamma photons in only a single dimension; and

reconstructing said plurality of sets of planar integral scintillation event data to form a tomographic image of said object.

20. A method of obtaining tomographic images of an object, comprising the steps of:

obtaining a plurality of sets of planar integral scintillation event data from said object at a plurality of azimuth angles of a rotating scintillation detector for each of a plurality of gantry angles of a gamma camera; and

reconstructing said plurality of sets of planar integral scintillation event data to form a tomographic image of said object.